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British Research Reshuffle: Can US Be Far Behind?

London. Since Britain usually leads the US by a few years in evolving patterns for the management and mismanagement of government-supported research, recent developments here merit notice as likely precursors of where Washington may be headed in R&D affairs. In earlier times, word of such matters more or less drifted across the ocean informally. But some measure of intensified interest is to be found in a \$96,000 contract that NSF's program of Research Applied to National Needs (RANN) recently awarded to the longtime US science attache here, Alan Mencher, for an 18-month study of Britain's experience in applying technology to national objectives.

It is generally agreed that that experience has fallen far short of producing the "white-hot technological revolution" that Harold Wilson promised a decade ago. And it is out of disappointment with the results that Wilson's successors have fashioned a series of policies that make RANN and similar American ventures in promoting utilitarian research look pretty timid.

The basic charter for these policies is a 15-page White Paper, "Framework for Government Research and Development," issued in July 1972 by Lord Rothschild, scientist member of the banking Rothschilds, whom Prime Minister Heath appointed to head a sort of think-tank operation, known as the Central Policy Review Staff, on the periphery of the cabinet. A voluminous and often cranky and contentious literature has arisen concerning the wis-

dom and intent of the Rothschild Report, but what it fundamentally comes down to is that a substantially larger portion of government-supported research should be specifically aimed at producing useful results—as measured by the commercial marketplace or social needs.

To achieve this, the White Paper dictated two profound changes in the traditional ways of administering research here: First of all, the applied research conducted by government laboratories is to be guided by a "customer/contractor approach"—meaning that if a lab (the contractor) wants to undertake a project, somebody out there (the customer) must certify that he's interested in having the results and demonstrate this by paying for the work. Details vary from lab to lab and ministry to ministry.

(Continued on page 2.)

In Brief

The promotional visit of the Concorde SST to the US last month was followed by a hairy postscript that the Anglo-French manufacturers prefer not to talk about: The 213-minute Washington-Paris return flight set a trans-Atlantic record, but Concorde arrived over Paris with fuel reserves below the 20-30-minute minimum required by most international airlines—despite favorable tail winds and temperature conditions.

Courtaulds, the big British chemicals and textiles firm, appears to hold the lead in the worldwide sweepstakes to market a credible substitute for cigarette tobacco. Following six years of research, the company will soon begin test marketing of a tobacco-flavor, cellulose-based cigarette that is said to be free of the health hazards of the real things.

Nostalgia was dominant when six former White House science advisers gathered at MIT Oct. 4-5 to help dedicate a new building and swap stories of what it was like to be near the center of power before Nixon abolished the White House science office last July. In tones of dismay the advisers described how scientists were gradually shut out of the Oval Office as the 1960's progressed. James R. Killian, Jr., Eisenhower's science adviser, noted wistfully that Thomas Jefferson and Franklin Delano Roosevelt had heeded the counsel of scientists, then reportedly said: "Those were times when great presidents had great advisers."

Changing hats: David Z. Beckler, veteran staffer at the now defunct White House science office, has jumped to the National Academy of Sciences staff, where he will work on "science policy issues."

Twisting the Truth at NAS

Last month a National Academy of Sciences spokesman claimed the Academy's controversial study of the health and environmental effects of the US defoliation campaign in Vietnam was being delayed three months to permit examination of "new data that came in late." (SGR, Vol. III, No. 16). But that, it turns out, was less than the whole story. A report from the Senate Armed Services Committee reveals that the Academy's defoliation report has actually been held up "because the conclusions of one essential section of the report, an assessment of damage to inland forests, has been challenged in the review process within the Academy." Knowledgeable sources say the report minimized the extent of damage but some of the reviewers felt the report was a whitewash. The "new data" now being studied are a batch of DOD photographs intended to help resolve the issue.

BRITAIN (Continued from page 1.)

and there is provision for a 10 percent surcharge to finance exploratory research for which there is no immediate customer, but the basic principle is clear: Research for the sake of research is to be severely diminished.

Second, mission-oriented agencies are to be given a say in the expenditure of funds of several of the research councils which traditionally have provided support for basic research. Thus, the Medical Research Council, which performs our NIH's extramural support role, has had to transfer about 10 percent of its \$55-million budget to the Department of Health and Social Security, and the proportion is scheduled to rise over the next few years. Of the roughly \$50 million controlled by the Agricultural Research Council, more than half is eventually scheduled to come under the control of the Ministry of Agriculture. In addition, representatives drawn from "customer" agencies are to sit on the councils as full-fledged members, rather than, as in the past, mere observers.

The principal exception to the invasion of the sovereignty of these basic science councils was the Science Research Council (SRC), a \$125-million-a-year counterpart of NSF. Since basic research is still regarded here as something of a sacred precinct that must be insulated against shifting political sentiments, Rothschild let it be, but did note that "a study is being made of possible overlaps between the research which it finances and other research work commissioned" by government agencies. SRC, however, has not gotten off altogether untouched by the government-inspired push for greater emphasis on applied research. In response to a Rothschild recommendation, the Council will appoint three members from mission-oriented departments as vacancies occur, and, in line with a trend that started about five years ago, support of engineering studies has more than doubled, and nearly half of SRC student awards are now in these fields.

In conjunction with these changes, all ministries were directed to equip themselves with officials bearing the title of chief scientist, which was actually no great change, since most of them had such a position under one title or another. And the creaky civil service establishment was directed to make it easier for real working scientists to move up into non-research administrative positions.

But the biggest change of all—just now in the process of being carried out—involved the establishment of what are referred to as Requirements Boards, which are committees of non-government appointees to whom virtually full authority has been given to review the ministries' support of research and to say stop or go on any project. The system runs wholly counter to the principles of departmental accountability that underly the American way of doing things, and anyone brought up on our obsession with conflict of interest would easily be appalled by the new British setup.

For example, in the Department of Trade and Industry (DTI), which is similar in many respects to

the US Department of Commerce, the annual research budget of about \$50 million now comes under the scrutiny of seven boards, each of which is composed of six members drawn from industry, two academics, two representatives from government agencies, and two specialists from government laboratories. Under the Rothschild scheme, any project that DTI wishes to support must be approved by the relevant board. According to DTI's interpretation of the board system, "The initiative for new research may come from the Boards themselves, from the DTI customer divisions (i.e., components of the Department with problems to be researched), or they may be bids for support from potential contractors (i.e., laboratories). The Boards consider the objectives of these proposals, their relationship to industrial and departmental needs, their timing, the market possibilities and the budget required. They are able to endorse, or otherwise, schemes submitted, determine the balance between competing projects, recommend priorities and indicate the preferred choice of contractor for the work. The Boards are also responsible for the supervision of the progress of the research and development they have approved, and of the measures taken to communicate and exploit the results."

When SGR observed to several DTI officials that their authority over R&D had been transferred to a group of outsiders, they agreed and said that was

(Continued on page 6.)

Rand Clashes with the Lord

Like most parts of the British government, the think tank headed by Lord Rothschild operates wholly out of public view except when it chooses to appear on stage. Rothschild recently decided to do just that—with a speech warning that England would decline to the economic level of Portugal if it didn't get itself moving. The result was a dressing down by the Prime Minister, who, on the same day, was delivering a we-never-had-it-so-good speech, and, of all things, a charge of plagiarism against Rothschild by the director of the Paris outpost of Herman Kahn's Hudson Institute.

The latter came from Edmund Stillman, author of a French-commissioned Rand study that concluded that France is the great economic success of the Western world, and that Britain is going down fast.

Following Rothschild's speech, Stillman accused him of cribbing both his numbers and analysis, adding, "I certainly regret we were not given some credit for having brought these matters to public attention but I am pleased that we have been vindicated."

Stillman noted, too, that Rand had proposed that the British government finance a study of the UK's economic prospects, similar to the one that had emerged so flatteringly for France, but that "establishment reaction was uniformly bad" and the proposal was turned down.

Budget Cutters Plan Attack on Defense IR&D

Congressional budget cutters had relatively little success when they tried to reduce the military authorization bill late last month. Proposals to cut various weapons systems were defeated, one by one, in extended debate on the floor of the Senate. But even as the congressmen and senators were largely granting the Nixon Administration's defense managers what they asked, there were signs that they would launch a major assault next year on defense research spending. The particular target will be Independent Research and Development (IR&D), a program which allows defense contractors to charge off substantial parts of their research budgets to the Defense Department (in some cases more than \$30 million annually) even though the research has no direct bearing on the performance of a contract.

Although the campaign will initially be aimed at defense spending, it has government-wide implications, since several agencies, including the National Aeronautics and Space Administration, have IR&D programs of one sort or another. If a substantial reduction should be imposed on such research spending, it would exacerbate the decline in the "R&D intensiveness" of US industry, as documented in the recent annual report of the National Science Board (SGR, Vol. III, No. 16).

Under a typical IR&D arrangement, the government gives the contractor an overhead payment, and the contractor is free to use the money for research that will maintain or advance its technology (subject to oversight by the Defense Department and a vague requirement that the work be at least potentially related to military applications). The theory behind IR&D is that a company which keeps its research effort at a high level will presumably do a better job on its defense contracts. But critics of the program—notably Sen. William Proxmire (D-Wis.)—have long contended that it is a "boondoggle" that pumps government money into lacklustre companies which then use the funds to improve their profitability with little concern for defense needs.

Also under scrutiny is government funding of bid and proposal (B&P) costs—those costs which a contractor incurs in preparing bids for potential contracts.

Proxmire has been complaining about IR&D since 1969. Various inquiries were subsequently carried out by the Senate Armed Services Committee, the General Accounting Office (GAO), and the Defense Department, with the result that ground rules were tightened and IR&D spending dipped.

But on September 24, in the midst of the Senate debate over military spending, Proxmire cited figures indicating that IR&D costs, "after dropping off some, have resumed an upward trend and have risen precipitously in the past two years." He said total payments to major defense contractors for IR&D and B&P jumped from \$609 million in 1968 to \$704 million in 1972. (These figures do not quite jibe with the

GAO's figures, which show a more modest increase.)

What's more, he suggested that IR&D payments are "being used to prop up the sales of defense firms whose prime contract awards have declined in recent years." The evidence for this is that Litton Industries, Lockheed Aircraft Corp., and Grumman Aerospace Corp.—"three major aerospace firms that have experienced great financial difficulties in the past several years"—each suffered a drop in

(Continued on page 4.)

Holifield Yields on AEC Split For PR Reasons

Rep. Chet Holifield, the California Democrat who was widely assumed to be a major barrier to the Nixon Administration's plans to split the Atomic Energy Commission in two, has now indicated that he will accept the change.

At a Sept. 27 hearing on nuclear reactor safety before the Joint Committee on Atomic Energy, Holifield commented on the Administration's plan to use the scientific and technical resources of the AEC as the core of a new Energy Research and Development Administration while shifting the AEC's licensing and regulatory activities to a newly created Nuclear Energy Commission. He said he would be "perfectly willing to do this" as a "public relations" move to undercut critics of the nuclear power program.

Environmentalists and other nuclear critics have long contended that the AEC was flawed by an internal conflict of interest—its mandate to develop nuclear power allegedly undermined its willingness to protect the public against nuclear hazards. Holifield denied that this has ever happened, but he endorsed splitting the AEC's functions "if for no other reason than to allay this fallacious charge that there has been a conflict of interest, for no other reason than that, so that these perpetual complainers will no longer have that as a fallacious argument." If a separate regulatory body is created, he said, "this will be with my blessing and with every effort I can make to get it done."

Holifield's attitudes are significant because he is chairman of the Government Operations Committee, which has jurisdiction over the reorganization proposals, and he is an influential member (and past chairman) of the Joint Committee on Atomic Energy, which has jurisdiction over the AEC.

At the same hearing, William Doub, one of the five AEC commissioners, also supported the Administration's plan to split the AEC, though both Doub and Holifield expressed concern about the new Nuclear Energy Commission's ability to obtain adequate funding and technical expertise.

Public Interest Groups to Seek Scientific Help

Public interest groups have decided to go ahead with plans to launch a new organization to recruit scientific advisers from laboratories throughout the country. But the scale of the operation will be less ambitious than was implied by sponsors who originally talked of forming an "Academy of Public Interest" to serve as a counterbalance to the vast advisory apparatus of the National Academy of Sciences (Vol. III, No. 17).

At a conference in Washington on Oct. 8, several dozen scientists and public interest representatives largely agreed that the new organization could perform a useful service by finding talent to help the undermanned and underfinanced public interest groups that often have difficulty finding expert assistance to deploy against the battery of professionals thrown up by industry in legislative fights, court battles, and administrative hearings at the federal and state levels.

No firm decisions were made at the conference, which was organized by Samuel S. Epstein, professor of environmental health and human ecology at Case Western Reserve University and was sponsored by the little-known Monsour Medical Foundation, of Jeannette, Pa. But one key figure in the move-

ment told SGR he expected that perhaps \$100,000 could be raised (with some coming from Monsour) to support a small Washington office that will serve as a clearinghouse of information and coordinator of activities among the mutually jealous public interest groups.

The new office is expected to devote considerable attention to stimulating professional societies, and their individual members, to play a more active role in public interest work. "What we're talking about today will fail unless we focus on professional societies," consumer advocate Ralph Nader warned the conference. The possibilities for such cooperation are enhanced by the fact that representatives of many professional societies, meeting at Alma, Utah, early last month, created a task force to work toward developing an inter-society science advising service.

The functions envisioned for the new Washington office include, among others, developing rosters of experts to advise public interest groups and government agencies; forming coalitions of groups around common objectives; publishing a newsletter and a journal; and finding mechanisms to tap financial support and channel it to public interest groups.

IR&D (Continued from page 3.)

defense sales from 1971 to 1972, yet the IR&D costs for each increased or remained about the same. Litton, for example, doubled its IR&D income, from \$3.6 million to \$7.8 million, at the same time that its defense sales dropped from \$548 million to \$414 million.

Describing the payments as "back door subsidies" which had been "allowed to mushroom in the dark recesses of the Pentagon," Proxmire lamented: "We are spending more through the Pentagon's IR&D back door than the entire research budget of the National Science Foundation, more than the combined 1974 Federal budget for research on cancer and cardiovascular disease."

Proxmire charged that the program reinforces the dominance of large aerospace firms in the defense market because the top 25 defense contractors, who did 41 percent of the Pentagon's business in 1972, received 72 percent of the IR&D payments this year. In return for this subsidy, he said, "the government receives no license, patent, royalty, or other rights in any inventions that result from IR&D efforts paid for with taxpayer's money. . . . The contractors can exploit such inventions in either defense or commercial markets. They are thus able to increase their profits and their competitive advantages over smaller firms and nondefense contractors who are not eligible for the IR&D subsidy."

Proxmire introduced an amendment to cut IR&D funds in the fiscal 1974 military authorization bill by 50 percent while suggesting that perhaps the program "ought to be eliminated altogether." But he withdrew his amendment after striking a deal with

Sen. Thomas McIntyre (D-N.H.), chairman of the R&D subcommittee of the Armed Services Committee, to request "an indepth investigation by GAO into the underlying assumptions and the overall justification of the IR&D program." The GAO findings are to be submitted to the Armed Services Committee in time for consideration of next year's military authorization bill.

There are signs that some senators on the committee believe IR&D costs can be reduced. McIntyre predicted that after GAO takes "a good, hard look," the IR&D program "will pursue its efforts to reduce costs." And Sen. Stuart Symington (D-Mo.), the second ranking Democrat on the committee, told Proxmire that "research and development has become a glamorous organization that is costing the American taxpayer an unnecessary amount of money." Symington indicated he has his eye on the entire defense research effort, not just IR&D. He made a veiled reference to a US weapon where the cost of research on the shell was 7,000 times the cost of production of the shell, and he described R&D as "part of this gigantic complex" which involves "wasted effort."

Efforts by McIntyre, Symington and others to curb expensive weapons programs proved largely unsuccessful this year. But the nebulous IR&D program, which has only the vaguest of ties to military preparedness, and the broader defense research budget as well, are apt to prove an inviting target for all senators who want to demonstrate their frugality without actually voting against a weapon the military brass claims is essential.—PMB

Study Finds Marketing Main Bar to Innovation

The first major report to emerge from the Nixon Administration's lethargic effort to identify factors that impede industrial innovation suggests that the barriers are more market- than technology-related.

The report—entitled *Barriers to Innovation in Industry: Opportunities for Public Policy Changes*—was prepared for the National Science Foundation's program of Research Applied to National Needs (RANN) by the Washington office of Arthur D. Little, Inc., the consulting firm, assisted by the Industrial Research Institute, Inc., an organization of senior R&D executives from more than 225 technology-oriented companies. The co-principal investigators for A.D. Little were Michael Michaelis and William D. Carey, two veterans of science policy-making in the Executive branch.

A draft of the final report was originally submitted to NSF as long ago as March 30, but it then got bogged down in reviews by members of the IRI and experts selected by NSF. Particular criticism was directed at the methodology and small sample size used in the study, with the result that the report was extensively rewritten and disclaimers were inserted stressing that the study was "exploratory" and "indicative" but did not constitute "conclusive evidence in sufficient detail to provide the basis for definitive public policy formulation."

The report is essentially an opinion survey of executives and middle-management personnel at 24 firms (17 large and 7 small) who were asked what barriers they had stumbled against in their actual operating experience and what suggestions they might have for public policy changes to overcome those barriers. Similar interviews were held with 25 senior government officials, 22 authorities in the financial community, and 35 officials in labor unions and related organizations.

Although the picture varied from industry to industry, technological factors, such as availability of scientific information, uncertainty in solving technical problems, and limitations of scale-up and design, were generally considered "of minimal importance as barriers to innovation." (Innovation was defined as "the process by which an idea or invention is translated into the economy.")

The most widely perceived barriers related to marketing. The industrialists complained, among other things, of a lack of reliable information to assess the potential market for a new technology; they also expressed concern that market fragmentation would limit the possibilities for profit in a new technology. But in a passage which should appeal to Administration officials who are looking for cheap ways to grapple with problems, the report concluded that the marketing barriers "to a considerable extent must be overcome by the diligence and ingenuity of industry," although "industry suggested that government can be of help in some areas."

Other important barriers included financial problems, organizational problems within corporations, lack of seed capital for starting new high-technology businesses, and governmental policies and practices

in such areas as patent, antitrust and regulatory matters. Resistance by labor unions was not considered a major barrier to innovation.

As for recommendations to overcome the barriers, the report, with an eye on the political and administrative realities, stressed the achievable rather than the ideal, according to one insider who helped prepare it. High-priority recommendations to the government included designating a focal point in the Executive branch to coordinate innovation policy; establishing a clearing house to distribute "non-proprietary market information and forecasts to large and small companies alike;" formulating performance criteria so as to clarify market demand in the fragmented public-sector markets (education, law enforcement, fire protection, health services, etc.); easing the tax rules on new, small, innovative companies; exploring fiscal, regulatory and legislative incentives to stimulate formation of "corporate new venture groups;" accelerating passage of the Administration's new patent reform bill; assessing the impact of antitrust policy; and establishing forums to interchange industry/government views on regulatory policy. The report also suggested that the government should articulate and aggregate market demand in "areas where private market forces are insufficient to sustain innovation."

The report wistfully calls for "open—and mutually trustful—communications" between government and industry, a reflection of industry's desire to avoid an adversarial relationship with the regulators and trust-busters. Its findings will now be fed into the technology incentives programs at NSF and the National Bureau of Standards, which are studying ways to stimulate innovation. There the conclusions and recommendations—which at this point represent a "wish list" from industry—will presumably be subjected to critical analysis to determine the extent to which they have merit.

National Medals of Science Awarded

The Nixon Administration, which has been as niggardly with scientific prizes as with funding for scientific research, finally got around to awarding the National Medal of Science on Oct. 10, the first such awards presented since February 1971.

The eleven recipients of the government's highest award for distinguished achievement in science, mathematics and engineering included:

Daniel I. Arnon, Berkeley; Carl Djerassi, Stanford; Harold E. Edgerton, MIT; William Maurice Ewing, University of Texas Marine Biomedical Institute; A. J. Haagen-Smit, Caltech; Vladimir Haensel, Universal Oil Products Co.; Frederick Seitz, Rockefeller University; Earl W. Sutherland, Jr., University of Miami; John W. Tukey, Bell Labs and Princeton; Richard T. Whitcomb, NASA; and R. R. Wilson, National Accelerator Laboratory.

BRITAIN (Continued from page 2.)

the whole idea. "Industry is the ultimate user of our research," one of them said, "and it has the right to decide on what the government should research." As for conflict of interest, it was contended that the industrial members are "distinguished men" and they could be counted on to refrain from doing anything naughty. A serious effort had been made, it was explained, to obtain female members, with the result that two of the 80 or so members appointed so far are women. When it was suggested that consumers rather than industry are the ultimate users of government research, puzzlement was expressed as to how consumer representatives might fit into the system. "They wouldn't understand the problems," a DTI man said. And when it was pointed out that under the new Federal Advisory Committee Act, boards of this type in the US would almost certainly have to open their meetings to the public, the response was that fortunately the British statute books are free of such a monstrosity.

Since the process of setting up the boards began only last July, and they have been meeting only once every two months, their work so far has mainly consisted of a project-by-project review of DTI's research interests, which, outside of aviation and energy—they come under a separate review system—is divided as follows: ship and marine technology, chemical and mineral processes and plant, engineering materials, mechanical engineering and machine tools, computers, systems and electronics, metrology and standards, and fundamental standards.

But in following the criterion that industrial willingness to share the costs is the true measure of potential value, the boards have already proven their bite. The materials board is reported to have rejected a project on the grounds that the industry that stood most to profit from the research was unwilling to pick up more than a small part of the cost. And a longrunning desalination project has been slated for termination at the end of the fiscal year unless industry shows a willingness to put up more funds. "If industry thinks there is likely to be a payoff," said a DTI official, "why shouldn't they help pay for it?"

Experienced observers of the British R&D scene

Japan Giving Grants

To Western Academe

Concerned about resentment over its booming affluence, Japan has lately been sprinkling substantial funds around the American academic community to promote Japanese studies. The process has now been extended to Great Britain, where, following a visit by Premier Tanaka last week, it was announced that Japan would provide \$1.2 million to finance academic exchanges between the two countries as well as Japanese studies in British universities. The announcement was accompanied by a Japanese expression of interest in investing in Britain's North Sea oil fields.

Advice Columnist a Medical Power

Syndicated columnist Ann Landers continues to demonstrate her clout as a medical publicist. In 1971, when the popular advice columnist endorsed the Kennedy-Javits Conquest of Cancer bill and urged her readers to become "part of the mightiest offensive against a single disease in the history of our country," they responded by deluging key Congressmen with tens of thousands of pieces of mail. More recently, when Ms. Landers used part of her Aug. 23 column to warn readers of the problem of high blood pressure, more than 150,000 of them wrote within ten days to the National Heart and Lung Institute, seeking a free booklet that Ms. Landers had touted. The institute was ready, however, having printed 200,000 copies of *Watch Your Blood Pressure*.

tend to ho-hum these administrative developments, pointing out that ever since the end of World War II, governments here have been reshuffling the applied research effort, first through a Department of Scientific and Industrial Research, then under a Ministry of Technology, and now through the Department of Trade and Industry. "None of it worked very well and this won't either," was the prediction of a veteran of these shuffles who is now an industrial consultant. This sentiment, which isn't rare, derives from the feeling that research in the UK is up to or ahead of world standards in a large variety of fields. The difficulty, it is felt, is that industry is sluggish in marketing, industrial plants are relatively antiquated, and the labor force doesn't give a damn. With innovation and productivity weighed down by these factors, the skeptics contend, the wisest schemes for managing research can never really amount to much. Furthermore, with the Conservative Party on the decline, and an election to be held probably within a year, it is likely that just as the Rothschild plan is hitting its stride, a new government will take office and decree still another format for government support of research.—DSG

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Europeans Set up a (Shaky) Science Foundation

Sixteen European nations have just agreed to establish a European Science Foundation (ESF), but despite the semantic similarity to our NSF, the new organization is simply another European effort to look cooperative without surrendering national control over money or programs.

The principal figures involved, mainly the government research chiefs or national academy officers of the member nations, trace their offspring back to early post-World War I discussions, which gives some measure of the pace of progress. But the im-

mediate stimulus was an attempt in June 1972 by the behemoth bureaucracy of the Common Market to get its hands on some of the research funds that member nations expend on their own research and development programs. This ploy was embodied in the so-called Spinelli Report, after a since-departed Common Market chieftain who proposed that the ESF "have a large measure of autonomy and . . . its own financial resources" to be derived from the Community budget and "special contributions from public or private bodies in the Member States or in non-member states." He also proposed that the ESF be given responsibility for "examining" any plan by the member countries to build scientific apparatus costing more than \$25 million. This was accompanied by a strong suggestion that the Community should have a powerful voice in such ventures.

Well, when it comes to doling out money, the Brussels bureaucrats can dispense only what they get from the member nations, and in each case, what goes to Brussels simply comes out of the pot that the politicians give their own citizens for the care and feeding of the national scientific enterprise.

The Spinelli scheme was followed by some fairly panicky meetings held under the auspices of Britain's Royal Society and West Germany's Max Planck Society. From these came a successful counterproposal, at the heart of which was a design to keep the Foundation wholly apart from the Common

(Continued on page 8.)

Department of High-Vacuum Oratory

. . . science and technology as institutions must learn concern for a finite, complex, man-made globe in which the more we uncover at the "endless frontiers" the broader the venture that is before us. Further, the institutions of the intellect face the task of differentiating themselves to a degree that is commensurate with the intellectual capital that has been amassed. But they must also find ways to strike a meaningful balance between the search for new knowledge and the application of knowledge to satisfy societal needs.

Because science and technology are increasingly pervasive of human activity, they must accommodate themselves to the knowledge base, to the institutions wherein they can be contained, and must adjust themselves to the values that are associated with these institutional activities (and vice versa).

Walter A. Rosenblith, Provost, MIT, essay in *Science and the Evolution of Public Policy*, Rockefeller University Press, 1973.

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EUROPEAN FOUNDATION *(Continued from page 7.)*

Market, and at least at the outset, and probably for a long time, without any money for supporting research. In fact, if what's now being planned were slightly diminished, virtually nothing would be left, for what the members have in mind is described as a forum or meeting ground for discussing common problems and seeking cooperative solutions in all fields of fundamental science, including the social sciences. Toward this goal, a preparatory meeting will be held later this month in Paris to line up matters for a fullscale meeting of the members next May in Stockholm. At the latter meeting, it is expected that a site for the Foundation's headquarters will be agreed upon, and officers will be appointed. To finance all this coming and going, the members have agreed to provide about \$1 million for expenses. (One British science administrator gloomily noted that his country's share would come out of funds that might otherwise go for research, and he didn't sound pleased about it.)

In any case, just to render the enterprise even a bit more ethereal, it was specifically stated that the members of the preparatory committee are not representatives of any organizations or nations, but are simply individuals appointed to a preparatory committee.

The member nations are: Austria, Belgium, Denmark, Spain, France, Greece, Norway, the Netherlands, Portugal, West Germany, Ireland, Britain, Sweden, Switzerland, and Yugoslavia. Italy is not yet officially in, but has indicated that it will come along.

AEC's McDaniel**Heads Argonne Group**

Paul W. McDaniel, who headed the Atomic Energy Commission's Division of Research from 1960 until his retirement in 1972, has been appointed president of the Argonne Universities Association (AUA) in a move which should ease the tension between the university consortium and the AEC.

The AUA, a coalition of 30 universities, mostly in the midwest, provides broad policy guidance for the AEC's troubled Argonne National Laboratory, which is located in the Chicago suburbs and managed by the University of Chicago.

Late last year the laboratory was thrown into confusion when its director, Robert B. Duffield, was forced out because he did not fit in with AEC plans to convert Argonne from a university-style research facility to a more disciplined engineering organization (Vol. II, Nos. 15 and 17). But fears that the lab would become inhospitable to basic research were alleviated somewhat last April when Robert G. Sachs, an eminent basic researcher in high-energy physics, was appointed lab director (Vol. III, No. 8).

Now the friction between the lab and the AEC will probably further diminish since McDaniel, who assumed his new post Oct. 1, has long-standing contacts in both the AEC and the basic research community. McDaniel is planning to establish an office in Washington, D.C.

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